

**EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH  
ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE**

**CERN - PS DIVISION**

PS/ PA/ Note 93-12 (Min.)

**MINUTES OF THE STRIPPING FOIL/BEAM TRANSFORMER  
MEETING**

M. Zanolli

Geneva, Switzerland  
30 April, 1993

**MINUTES OF THE  
STRIPPING FOIL/BEAM TRANSFORMER MEETING**  
held on 7 April 1993

Present : P. Bourquin, A. Burlet, R. Cappi, C. Carter, L. Danloy, G. Gelato,  
M. Zanolli

**LOCATION**

M. Zanolli : The STRIPPING FOIL MECHANISM, to be designated FT16.STR 373, is foreseen to be installed near the end of transfer tunnel TT2, between cross-over vacuum tank TT2/TT10-AC ejection/TTL2 and TV MONITOR FT16.MTV 374. The order of this assembly has been placed, it includes its study, design, and manufacture. The layout drawings shall be available in due time.

Two beam transformers will measure the efficiency of the stripping foil : one, the FT16.TRA 372, is going to be placed right upstream of the stripping foil, while the other one, the FT16.TRA 379, will be installed between the bending magnet FT16.BHZ 378 and the TV-Monitor FT16.MTV 679.

The two beam transformers shall be identical. For their design, both local installation places have to be taken into consideration simultaneously : the upstream space is restricted in width, while the downstream one is limited in length.

**BEAM TRANSFORMERS**

G. Gelato : A number of beam transformer designs do exist, however, the one developed for F. Nanni will be chosen if the beam size allows the use of a vacuum tube with dimensions 114 O/D x 110 I/D.

R. Cappi is asked to check on the beam cross-section in these regions. In the meantime Roberto made the calculations taking into account different beam energies ( see his VM-message of 8 April 93 ), and he found that under the worst conditions the proposed vacuum tube can be accepted. In this case the beam would have a maximum of 51 mm in width and 54 mm in height totally.

( Remarks : Taking the beam to be of rectangular shape, these dimensions correspond to a diagonal of 74.3 mm. Inside a 110 dia tube, such a beam could be allowed a pure horiz. offset of 22.4 mm, or 21.7 mm vertically. A combined offset e.g. under 45 degrees in the plane vertically to the beam axis would correspond to a displacement of up to 13.4 mm horizontally and 11.9 mm vertically before the beam touches the chamber wall.)

## **VACUUM EQUIPMENT**

All new vacuum chambers will be equipped with the PS/Booster type of conical flanges of 195 dia, except at both ends of these two straight sections, where they have to match the vacuum flanges in place. Transition pieces, stiff or flexible, will also have to be supplied to facilitate installation and alignment.

A. Bulet : An additional vacuum ion pump of 230 l/s shall be installed between the new STR 373 and the existing MTV 374 to assure an acceptable pumpdown time.

## **DESIGN**

P. Bourquin : The overall study and design will be done in the MT-Div./PS-branch, using budget code 73.899.

Supports, and where necessary alignment tables, are part of these new elements and have to be furnished with them.

The existing drawings of the beam line are to a great part not up to date and the information on them is rather restraint. However, some more details are still available from M. Zanolli.

## **INSTALLATION AND POWER SUPPLY**

The installation of the tubes for water, hoses for compressed air, and/or cables for the electric power and control should be handled as a whole, i.e. together for each supply.

Special precautions have to be taken when drawing the measuring cables, such that no interferences may occur with neighbouring lines.

The bolting-down of the elements on the floor, their alignment and vacuum connections will also be done together.

## **TIME TABLE**

R. Capi : Physics with heavy ions (Pb) will start mid-94, therefore all the elements should be made operational during the long shut-down 1993/94, tests included.

In late autumn 93 it shall be decided, whether the manufacture of spare vacuum tubes will be necessary to replace for a certain time the actual elements.

P. Bourquin : It would be wise to draw now already these vacuum tubes.

## COORDINATION

M. Zanolli looks after the smooth execution of these works and shall also serve as linkman.

### Distribution

P. Bourquin  
A. Burlet  
R. Cappel  
C. Carter  
L. Danloy  
G. Gelato  
M. Zanolli

### For information

D. Dekkers  
H. Haseroth  
J.P. Riunaud  
M. Van Rooy